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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,419	07/11/2003	David John Hillis	MRKS/0122	7081

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EXAMINER

LE, HUNG CHARLIE

ART UNIT PAPER NUMBER

3663

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/618,419	HILLIS ET AL.	
	Examiner	Art Unit	
	Hung C. Le	3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1- 56 is/are pending in the application.
- 4a) Of the above claim(s) 30 - 53 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 29, 54 - 56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>Various</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1 – 29, 54 – 56 (Claims 30 – 53 were cancelled by applicant) have been considered but are moot in view of the new ground(s) of rejection.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the: "...discrete zone...", "...a level of the radial force..." (Claims 1 & 54), "...discrete zones are circumferentially spaced..." (Claim 14), "...discrete zones are axially spaced..." (Claim 15), "...the bearing member is fluid pressure actuated." (Claim 18), "...a cone swage expander." (Claim 21), "...the tubular in a wellbore drilled to access hydrocarbon reservoirs..." (Claim 24) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The

figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 12, 26 & 54 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 12:

Regarding claim 12, the phrase "such that" (same as "such as") renders the claim

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indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

With respect to claim 26:

The term "...substantially unexpandable." is vague/unclear. It is not known what all is meant and encompasses by the term "substantially" as to what standard is referred to. Therefore, it makes the claim indefinite.

With respect to claim 54:

The term "...substantially no diametric " is vague/unclear. It is not known what all is meant and encompasses by the term "substantially" as to what standard is referred to. Therefore, it makes the claim indefinite.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 – 29, 54 – 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brenneke (2,575,938) in view of Creger et al. (4,262,518). Brenneke discloses

applicant's claim limitation except its method/tool is used for cylinder instead of for expanding tubular or hollow workpieces, and more particularly to provide substantially complete and continuous contact with the workpiece throughout the zone of deformation (discrete zones) (Col. 1, lines 5+) which is taught by Creger et al. (Also see Abstract; Col. 1, lines 19+). Creger et al. also teaches about swage expanding of tube (Col. 1, lines 19+).

With respect to claim 1: Brenneke discloses: A method of increasing collapse resistance of a tubular (21; Fig. 2), the method comprising:

- (a) locating a tool (Figs. 1 - 4) having at least one bearing member (13) within the tubular (21);
- (b) placing the bearing member (13) in engagement with a wall of the tubular (21) to apply a radial force (Col. 8, lines 25+) to a discrete zone of the wall (21);
- (c) applying said radial force (Col. 2, line 41+) to further discrete zones of the wall (21), and
- (d) selecting a level of the radial force (Col. 3, lines 16+) to increase the collapse of the tubular (21).

While patent drawings are not drawn to scale, relationships clearly shown in the drawings of a reference patent cannot be disregarded in determining the patentability of claims. See In re Mraz, 59 CCPA 866, 455 F.2d 1069, 173 USPQ 25 (1972).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method/tool as disclosed by Brenneke by the teaching of Creger et al. in order to provide continuous circumferential contact with the workpiece through out the annular deformation zones and would accomplish the deformation by controllably extruding the desired portion in a single operation (See Col. 2, Lines 8+)

With respect to claim 2: Brenneke further discloses: wherein applying said force (Col. 2, lines 41+) induces compressive yield of at least an inner portion of the wall (21) due to selecting the level of the radial force sufficient to cause the compressive yield (Col. 3, lines 16+).

With respect to claim 3: Brenneke further discloses: wherein applying said radial force (Col. 2, lines 41+) induces plastic deformation of at least an inner portion of the wall (21) due to selecting the level of the radial force sufficient to cause the plastic deformation (Col. 3, lines 16+).

With respect to claim 4: Brenneke further discloses: wherein the bearing member (13) is a rolling element and the tool is moved relative to the tubular (21) to provide a rolling contact between the rolling element and the tubular wall (Fig. 2).

With respect to claim 5: Brenneke further discloses: moving the tool relative to the tubular (21) to provide a sliding contact between the bearing member (13) and the tubular wall (Figs. 1 & 2).

With respect to claim 6: Brenneke further discloses: Wherein the tool is advanced axially relative to the tubular (21, Fig. 1).

With respect to claim 7: Brenneke further discloses:

Wherein the tool is rotated relative to the tubular (21) about a longitudinal axis of the Tubular (Fig. 2).

With respect to claim 8: Brenneke further discloses: Wherein the tool is located within the tubular (21, Fig. 2).

With respect to claims 9, 10 & 11: Brenneke further discloses: Wherein applying the radial force causes a degree of diametric expansion of the tubular (21) (Col. 3, lines 16+).

With respect to claims 12 & 29: Brenneke further discloses:

wherein the tool is moved relative to the tubular (21) such that the bearing member (13) describes a helical path along the tubular wall.

With respect to claim 13: Brenneke further discloses:

wherein the tool has a plurality of bearing members (13, Fig. 2), and each bearing member is urged into engagement with the wall of the tubular (21) to impart a radial force to a respective discrete zone of the tubular wall (Fig. 2).

With respect to claims 16 & 17: Brenneke further discloses:

wherein the bearing member (13) applies the radial force to the tubular wall as a point load (Figs. 1 & 2).

With respect to claim 18: Brenneke further discloses: wherein the bearing member (13) is applied pressure actuated (Col. 3. lines 16+).

With respect to claim 19: Brenneke further discloses:

wherein the tool comprises a plurality of bearing members (13) and at least one of the bearing members is independently radially movable (Fig. 1).

With respect to claim 20: Brenneke further discloses:

wherein the tool comprises a ball-peening tool and is impacted against the inner surface of the wall (Fig. 2).

With respect to claim 23: Brenneke further discloses: when executed on surface (wall of tube 21).

With respect to claim 25: Brenneke further discloses: wherein the tubular (21) is located within a larger diameter tubular (22, Fig. 2).

With respect to claim 26: Brenneke further discloses: wherein the larger diameter tubular (22) is substantially unexpandable (Fig. 2).

With respect to claims 27 & 28: Brenneke further discloses: wherein the tool creates a strain path in the wall of the tubular (21) having a circumferential element (See Fig. 1 & 2).

With respect to claim 54: Brenneke discloses: A method of increasing collapse resistance of a tubular, the method comprising: locating a tool (Fig. 1) having at least one bearing member (13) within the tubular (21); placing the bearing member in engagement with a wall of the tubular to apply a radial force to a discrete zone of the wall (Figs. 1 & 2); applying said radial force to further discrete zones of the wall (Fig. 1), and selecting a level of the radial force to increase the collapse of the tubular (Col. 3, lines 16+) wherein the tubular (21) experiences substantially no diametric expansion as a result of the radial force applied by the bearing member (13) (See Col. 3, lines 16+).

With respect to claim 55: Brenneke further discloses: wherein an outer diameter of

The tubular (21) experience s no diametric expansion as a result of the radial force applied by the bearing member (Fig. 2; Col., lines40+) .

With respect to claim 56: Brenneke discloses: A method of increasing collapse resistance of a tubular, comprising: expanding the tubular with a cone expander (See Creger et al. Col. 1, lines 19+) ; subsequently, locating a tool having at least one bearing member (13) within the tubular (21); placing the bearing member in engagement with a wall of the tubular to apply a radial force to first and second separated discrete zones of the wall (Figs 1 & 2); and selecting a level of the radial force to increase the collapse of the tubular (21) (Col. 3, lines 16+).

7. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brenneke (2,575,938) in view of Creger et al. (4,262,518) and Zheng et al. (6,571,870).

Brenneke discloses applicant's claim limitation except its method/tool is used for cylinder instead of for expanding tubular or hollow workpieces, and more particularly to provide substantially complete and continuous contact with the workpiece throughout the zone of deformation (Col. 1, lines 5+) which is taught by Creger et al. (Also see Abstract; Col. 1, lines 19+). Creger et al. also teaches about swage expanding of tube (Col. 1, lines 19+). Zheng et al. teaches about an apparatus for use in a wellbore comprises a housing and at least one impact element rotatably mounted in the housing (Col. 2, lines 10+).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method/tool as disclosed by Brenneke by the teaching of Creger et al. and Zheng et al. to apply the method to a wellbore in order to increase recovery rate of products/hydrocarbons while reducing the operation cost (See Col. 1, Lines 21+)

8. The statements of intended use or field of use, e.g., "is selected to, is subject to, etc..." clauses are essentially method limitations or statements of intended or desired use. Thus, these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference.

See In re Pearson, 181 USPQ 641; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re Casey, 512 USPQ 235; In re Otto, 136 USPQ 458; Ex parte Masham, 2 USPQ 2nd 1647.

See MPEP § 2114 which states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ 2nd 1647

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions. In re Danly, 120 USPQ 528, 531.

Apparatus claims cover what a device is not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

As set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung C. Le whose telephone number is 571-272-8757. The examiner can normally be reached on M-F: 07:30am - 05:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack W. Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is

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571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HCL
02/02/07


JACK KEITH
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